Case report

Taylor Flap Reconstruction and its Impact on Healing and Psychological Comfort: A Therapeutic Challenge Incurred Within a Developing Country.

Abstract

Purpose: The purpose of this study was to evaluate the feasibility and short-, medium-, and long-term results of Taylor flap reconstructions after abdominoperineal amputation extended to the posterior vaginal wall by ~~carcinologic imperative~~ of lower rectal cancer.

Abdominoperineal amputation is burdened with a significant morbidity closely related to the large perineal defect unavoidable at the cost of a large carcinological excision.

Hence the importance of pelviperineal filling techniques to facilitate perineal healing and to ensure a better quality of life, especially sexual, in women after posterior colpectomy, instead of a mutilating posterior pelvic exenteration.

We describe and analyze below two cases of perineal reconstruction by modified Taylor flap.

During 2020, two of our patients underwent rectus abdominis musculocutaneous flap reconstruction pedicled on the inferior epigastric vessels and with a transverse skin paddle, for abdominoperineal amputations performed for malignant melanoma of the anal canal (Fig.1) and adenocarcinoma of the lower rectum respectively.

Our two patients underwent a posterior colpectomy associated with abdominoperineal amputation, which improved the quality of life of the patients, in particular an almost normal sexual activity in the medium and long term.

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The postoperative follow-up was simple with an average hospital stay of 09 days. Abdominoperineal healing completed with a median of 19.5 days.

Follow-up without any particularities with a one-year follow-up.

The realization of modified Taylor flaps allowed a complete and fast perineal healing, and a psychological comfort in connection with a satisfactory sexual activity in both patients.

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Keywords:

Taylor flap; Abdominal-perineal amputation; posterior colpectomy; Melanoma; Rectal Cancer; Rectus Abdominus

Introduction:

Abdominoperineal amputation (APA) is the gold standard procedure for lower rectal cancers.

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In the latest published series, postoperative complication rates without perineal reconstruction vary from 35 to 66% [1].

Since 2002, we have resorted to plastic surgery using musculocutaneous flaps to overcome the postoperative complications inherent to the extent of the excision and the difficulty of closing the perineal defect, in order to accelerate healing, limit the aesthetic after-effects and preserve sexual activity, particularly in women, by preserving the lower genital tract, which results in a considerable improvement in the quality of life of the patients.

We report two cases of perineal reconstruction using a modified Taylor flap. We analyzed the postoperative course, specific complications, and results of this surgery.

Case presentation

We report two cases of lower rectal cancer treated during the year 2020.

They were two women in their 50s with a WHO score of 0, preserved nutritional status, and no surgical history that could compromise vascular flow tributary to the lower epigastric vessels.

One of them had a malignant melanoma of the anal canal (Fig.1), while the other patient had a well-differentiated adenocarcinoma of the lower rectum (Fig.2), treated with PAA after concomitant radio-chemotherapy.

In both patients, the abdominoperineal amputation extended to the lower 2/3 of the posterior vaginal wall for carcinological reasons and the reconstruction required an extension of the skin flap to ensure the plasticity of the posterior vaginal wall.

Thus, the reconstruction began with the removal of the musculocutaneous flap with an average size of eight centimeters in width and twenty-one centimeters in length, initially traced (Fig. 3) along a transverse axis at the height of the navel on the right side, giving way to the definitive colostomy on the left at the end of the operation,

Once the flap has been removed (Fig. 4), it is tilted downwards by a 180° rotation intra-abdominally to fill in the perineum. The proximal musculocutaneous part is fixed in two planes to cover the perineal region and the distal part of the skin paddle fills the posterior aspect of the vagina, without having to open and section the broad and round ligament.

Reconstruction is performed as soon as the abdominoperineal amputation is completed. The distal colonic stump concerned by the stoma is left to stand, hemmed in to the skin at the last stage of the operation.

Finally, the flap will be fixed to the perineal floor by separate stitches going up the posterior surface of the vagina (Fig. 5).

Furthermore, the fascia is closed simply by bringing the fascial edges of the anterior rectus fascia together, without any prosthetic reinforcement, in order to reduce the risk of sepsis, which is increased by the proximity of the definitive left iliac colostomy, and taking care not to plicate or injure the feeder pedicle of the flap.

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In performing the perineo-vaginal plasty, we set ourselves the objective of evaluating the duration of healing and the quality of life of our patients, particularly sexual quality, by means of close clinical monitoring, initially weekly for one month, then every 15 days during the first trimester, and then monthly, with a current follow-up of 8 months.

Thus, healing is declared when the 2 sites; abdominal donor and perineo-vaginal receptor have completely healed.

The quality of sexual life is evaluated by an anamnesis concerning the quality of intercourse, including vaginal dryness and dyspareunia.

Results:

In the hospital, the patient operated on a melanoma of the anal canal had presented phlyctenoid bullae on the proximal cutaneous side of the flap, which disappeared thanks to daily fat dressings. Apart from this, both patients progressed well without the emergence of any complication specific to the excision surgery or specific to the plastic surgery procedure.

The length of hospitalization for both patients was 10 days.

Complete perineal healing was obtained at the end of the 3rd week in both patients.

With an average follow-up of one year, no complications arose at either the donor or recipient sites.

Coital resumption started progressively from the second week, just after complete perineo-vaginal healing (Fig.6); delayed by one week, following dyspareunia in the patient who underwent excision for anal melanoma.

Discusion:

Perineal healing and psychological ease, particularly sexual ease, represent the essential goal in patients who have undergone PAA associated with posterior colpectomy.

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In 1983, Taylor described a musculocutaneous flap of the rectus abdominis pedicled on the deep inferior epigastric vessels [2]. The skin racket was initially traced along an oblique axis that follows a line from the umbilicus to the tip of the scapula [3].

The technical variant eventually adopted in our two patients consisted in harvesting a paddle with a large transverse axis. This transverse rectus abdominis myocutaneous flap (TRAM flap) with an inferior pedicle is mainly indicated in slim individuals.

This option is one of the safest and most effective solutions for the coverage and filling of pelvic-perineal tissue loss [4].

Direct closure with omentoplasty as one of the alternatives to the Taylor flap had a significantly higher complication rate, healing time and occurrence of perineal hernias (48.9% vs. 26.8% and 117 d vs. 18.7 d; 15.4% vs. 0% respectively in the series of Lefèvre et al.) than with a Taylor flap, with an almost identical incidence of occurrence of abdominal eventrations [5].

During pelvic-perineal plasties, we can also resort to the use of other flaps such as the Gracilis flap, at the cost of a questionable vascular reliability and a much smaller size compared to the Taylor flap, which most often results in samples being taken from both sides, or even by combining several at the same time, especially at the time of enlarged reconstructions (example: by petal flap of the lotus and the pudendal fascio-cutaneous flap) which are complex and difficult techniques, and which can be complicated by partial or total necrosis of the flaps, of ischemic or suppurative origin in 25% of the cases; elucidated during innumerable series of studies.

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Thus, the Taylor flap represents the reference technique for covering large pelvic-perineal losses of substance, particularly in enlarged PAAs. The other plasty techniques are considered as a second choice, or in case of impossibility of harvesting the pedicled rectus flap (anterior laparotomies complicated by wide parietal ventrations) [6].

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Conclusion:

The vascular reliability and the large volume of the musculocutaneous flap are capital assets, to ensure an optimal filling of the pelvic-perineal defect related to pelvic exenteries and abdominoperineal amputations.

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According to previous published series and our two reported cases, the Taylor flap is the technique of choice with a much reduced healing time, in all patients who have undergone PAA for anal or lower rectal cancer without worsening the morbidity figures, related to the radical surgery, with a benefit on psychological comfort and sexual quality of life.

Compliance with ethical standards:

Ethical approval :Ethical committee approval was waived because of the type of this article.

Informed consent: Informed consent is not applicable to this type of articles.

Data availability statement: Not applicable because of the type of this article.

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Figures :

Fig. 1: Surgical specimen of a melanoma of the anal canal after PAA

Fig. 2a :

Fig. 2b :

Fig. 2a and 2b: Surgical specimen of an adenocarcinoma of the lower rectum infiltrating the posterior wall of the vagina after PAA and posterior colpectomy

Fig. 3 : incision of the skin paddle of the transverse Taylor flap

Fig. 4a :

Fig. 4b :

Fig. 4a and 4b: mobilization of the Taylor flap

Fig. 5 : cutaneous suture of the flap

Fig. 6 : Healing status of the perineal site (last check at 18 weeks)